

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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- 7 DEC 2000

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing

(day/month/year) 05.12.00

Applicant's or agent's file reference

DCR P21124WO

IMPORTANT NOTIFICATION

International application No.

PCT/GB99/02823

International filing date (day/month/year)

26/08/1999

Priority date (day/month/year)

28/08/1998

Applicant

DEN NORSEK STATS OLJESELSKAP A.S. et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/



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PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference DCR P21124WO		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB99/02823	International filing date (day/month/year) 26/08/1999	Priority date (day/month/year) 28/08/1998	
International Patent Classification (IPC) or national classification and IPC G01V3/12			
Applicant DEN NORSEK STATS OLJESELSKAP A.S. et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 23/03/2000	Date of completion of this report 05.12.00
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Juárez Colera, M  Telephone No. +49 89 2000 3100

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB99/02823

I. Basis of the report

1. This report has been drawn on the basis of *(substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments (Rules 70.16 and 70.17).):*

Description, pages:

1-9 as originally filed

Claims, No.:

1-22 as originally filed

Drawings, sheets:

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
 - ☐ the language of publication of the international application (under Rule 48.3(b)).
 - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).
3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority in written form.
 - ☐ furnished subsequently to this Authority in computer readable form.
 - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
 - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

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☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-16,19,22
	No:	Claims	17,18,20,21
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-22
Industrial applicability (IA)	Yes:	Claims	1-22
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1 Prior art

Reference is made to the following documents:

- D1: US-A-4 633 182 (DZWINEL JAN) 30 December 1986 (1986-12-30)
- D2: WO 98 28638 A (KARTASHOV MIKHAIL VIKTOROVICH ;NIZAMOV ALEXANDR ZHAKFEROVICH (RU);) 2 July 1998 (1998-07-02)
- D3: GREAVES R J ET AL: 'NEW DIMENSIONS IN GEOPHYSICS FOR RESERVOIR MONITORING' SPE FORMATION EVALUATION,US,THE SOCIETY, RICHARDSON, TX, vol. 6, no. 2, page 141-150 XP000646267 ISSN: 0885-923X

2 Article 33(1) and (2) PCT (Novelty)

- 2.1 The present application does not meet the requirements of Article 33 (1) and (3) EPC, because the subject-matter of claims 17, 18, 20 and 21 is not new, the reasons being as follows:
- 2.2 Document D1 discloses (cf. abstract, col. 1, line 58 - col. 2, line 4; col. 3, line 61 - col. 4, line 50) an apparatus for determining the nature of a reservoir comprising means for applying a time varying electromagnetic field, means for detecting the response and means for analysing the effects on the detected field caused by the reservoir to determine the content of the reservoir.
- 2.3 The fact that the approximate geometry and location of the reservoir are known, which actually constitutes the only feature that is not explicitly disclosed in D1, does not constitute a feature forming part of the claimed subject matter (see PCT Guidelines, IV-III, 4.8a).
- 2.4 Therefore the subject matter of independent claim 17 is not new.

- 2.5 The additional features introduced by dependent claims 18, 20 and 21 are also disclosed in D1 (cf. col. 2, lines 33-41; col. 3, lines 10-23 and col. 4, lines 33-50). Consequently the subject matter of these claims is also not new.

3 Article 33(1) and (3) PCT (Inventive Step)

- 3.1 The present application does not meet the requirements of Article 33 (1) and (3) EPC, because the subject-matter of claims 1-16, 19 and 22 does not involve an inventive step (Rule 65(1),(2)) PCT.
- 3.2 Document D1 discloses (cf. abstract, col. 1, line 58 - col. 2, line 4; col. 3, line 61 - col. 4, line 50) a method for determining the nature of a reservoir by applying a time varying electromagnetic field, detecting the response, analysing the effects on the detected field caused by the reservoir and thereby determining the content of the reservoir.
- 3.3 The difference between D1 and the present invention resides in the fact that the approximate location and geometry of the reservoir are assumed to be already known in the method disclosed in the present invention and not in the one from D1.
- 3.4 The problem to be solved by the present invention may therefore be regarded as the use of the electromagnetic method to obtain information of the reservoir that complements the information already obtained.
- 3.5 The document D2 (cf. abstract) discloses a method of combining seismic and electric techniques to determine the content of a reservoir, where the electromagnetic data area used as complementary data to the seismic information. This solution is similar to that of claim 1. Moreover D3 (cf. page 141, col.2, lines 28.36) also gives an indication for combining both techniques in the same way. The skilled person would consider it obvious to apply this solution to the method disclosed in D1 in order to solve the problem posed, therefore arriving to the method of claim 1. The subject matter of this claim does therefore not involve an inventive step.

- 3.6 The additional features introduced by dependent claims 2, 3, 5, 8 and 14 are also disclosed in D1 (cf. col. 2, lines 33-41; col. 3, lines 10-23 and col. 4, lines 1-21). Consequently the subject matter of these claims is also not inventive.
- 3.7 The features introduced by dependent claims 6, 7 and 9-13 consists in the selection of the values of the transmission time, distance between transmitter and receiver and wavelength and frequency of the transmitted wave, from the range normally used in the field of electromagnetic exploration. Such a selection can only be regarded as inventive, if the selected values give rise to unexpected effects or properties in relation to the rest of the range. However, no such effects or properties are indicated in the application. Hence, no inventive step is present in the subject-matter of these claims.
- 3.8 In claims 4, 15, 16, 19 and 22 slight changes in the method of claim 1 and in the apparatus of claim 17 are defined which come within the scope of the customary practice followed by persons skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of these claims also lacks an inventive step.

4 Article 33 (1) and (4) PCT (Industrial Applicability)

The subject matter of claims 1-22 is susceptible of industrial application.

Re Item VII

Certain defects in the international application

- 1 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D3 is not mentioned in the description, nor are these documents identified therein
- 2 Claim 22 is a method claim dependent on claims 1-16, however it is not placed after claim 16 contrary to rule 6.4 (c) (PCT Guidelines, IV-III, 3.6).

Re Item VIII

Certain observations on the international application

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB99/02823

1 Article 6 PCT (Clarity)

- 1.1 Claims 16 and 17 do not meet the requirements of Article 6 PCT in that the matter for which protection is sought is not clearly defined. The claims attempt to define the subject-matter in terms of the result to be achieved which merely amounts to a statement of the underlying problem and they do not specify the technical features necessary for achieving this result.